

# RADIOEAR HELMET TESTED



Helmet-Mounted  
Bone Conduction  
Communication System



Fire Training Academy  
Testing Site

*“The bone conduction technology mounted in the helmet can provide us with a valuable tool that allows us to communicate clearly, and enhances our ability to focus on the crisis at hand.”*

*Captain James Petruzzi  
Training Instructor,  
Pittsburgh Bureau of Fire.*

Sensory Devices, Inc. has conducted a demonstration and evaluation of an improved version of the Radioear Fireman’s Helmet as an activity of a recent Cooperative Research and Development Agreement (CRADA) between the Human Research and Engineering Directorate of the US Army Research Laboratory (ARL), Aberdeen Proving Ground.

Testing was facilitated by FirstLink in conjunction with the Pittsburgh Bureau of Fire at the Allegheny County Fire Training Academy. This testing allowed the firefighters to enter a controlled burning structure while utilizing the hands-free, helmet-mounted bone conduction communication system. Both the intelligibility of the system and consistency of its performance were evaluated. Communications between the crew chief and the command unit stationed outside of the mock crisis situation were the subject of testing in the staged scenario.

The system components were mounted into the experimental Fireman’s Helmet. Based upon previous tests, the helmet was modified by replacing the standard head contact microphone with the newest version microphone, the HCM/A. Sensory Devices Inc. branched into manufacturing bone conduction microphones under license from the US Navy, and also designs and produces their own bone conduction headsets.

This activity demonstrated the advancement of the product’s capabilities while providing a platform on which to designate future improvements. Changes will include modifications to the microphone circuitry, the helmet design, and the digital recording system’s ability to capture the transmissions. The planned improvements will best serve the first responders by providing them with tools to communicate with consistency.

The Army Research Laboratory (ARL) is the Army’s corporate basic and applied research laboratory. Its mission is to provide innovative science, technology, and analysis to enable full spectrum operations. Human Research and Engineering is one of ARL’s six ARL Directorates.

FirstLink is the Department of Defense’s National Center of Excellence for First Responder Technologies, supporting first responder needs through the development of commercial pathways between Department of Defense Science & Technology, private industry and universities.

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